

REMARKS

The Office Action dated December 26, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1-5 have been amended to more particularly point out and distinctly claim the subject matter of the invention. Claim 6 has been cancelled without prejudice or disclaimer. No new matter has been added. Therefore, claims 1-5 are currently pending in the application and are respectfully submitted for consideration.

Information Disclosure Statement

The Office Action alleged that the Information Disclosure Statement (“IDS”) filed May 26, 2006 fails to comply with 37 CFR 1.98(a)(3) because, with respect to references 5-279689 (10/26/1993 JP) and 10-8085 (1/13/1998 JP), the IDS “does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, [of] each patent listed that is not in the English language.” (See Office Action of page 2).

Applicants respectfully submit that an IDS has been concurrently filed with this application which includes the references JP 5-279689, and JP 10-8085, and a translation of the abstract of each reference. Accordingly, Applicants respectfully request that the Examiner consider the references JP 5-279689, and JP 10-8085, and indicate in the record that said references have been considered.

Claim Rejections Under 35 U.S.C. § 112

The Office Action rejected claim 6 under 35 U.S.C. § 112, second paragraph, for allegedly failing to particularly point out and distinctly claim the subject matter which Applicant regards as his invention. Specifically, the Office Action alleged that claim 6 provides for the use of an aqueous lubricant composition, but since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. (See Office Action at page 2).

Applicants respectfully submit that claim 6 has been cancelled, and that the cancellation effectively moots the rejection. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Claim Rejections Under 35 U.S.C. § 101

The Office Action rejected claim 6 under 35 U.S.C. § 101 for alleging failing to recite statutory subject matter. Specifically, the Office Action alleged that claim 6 is merely a claimed recitation of a use, and that the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, and results in a claim which is not a proper process claim under 35 U.S.C. § 101. (See Office Action at page 2).

Applicants respectfully submit that claim 6 has been cancelled, and that the cancellation effectively moots the rejection. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Claim Rejections Under 35 U.S.C. § 103(a)

The Office Action rejected claims 1-6 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Forsberg (U.S. Reissue Patent No. RE6,479) (“Forsberg”), in view of Yamamoto et al. (U.S. Patent No. 4,256,591) (“Yamamoto”). The Office Action took the position that Forsberg discloses all the elements of the claims with the exception of “the amount of molybdenum disulfide solid lubricating agent as 10% to 40% by mass,” “2 to 20% by mass of an attaching agent having both lubricating and dispersing properties,” “2 to 20% by mass of an agent having both wetting characteristics and moisture evaporation-accelerating actions; and water,” and “the aqueous lubricant for plastic working.” The Office Action then cited Yamamoto as allegedly curing some the deficiencies of Forsberg. The Office Action further alleged that the remaining deficiencies are “result effective [variables],” and that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” (See Office Action at pages 4-6). The rejection is respectfully traversed for at least the following reasons.

Claim 1, upon which claims 2-5 are dependent, recites an aqueous lubricant for plastic working, which includes 10 to 40% by mass of an inorganic solid lubricating

agent, 2 to 20% by mass of an attaching agent having both lubricating and dispersing properties, 2 to 20% by mass of an agent having both wetting characteristics and moisture evaporation-accelerating actions, and water.

As will be discussed below, the combination of Forsberg and Yamamoto fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the features discussed above.

Forsberg discloses a composition comprising water and at least one carboxylic salt dispersed or dissolved in the water. The carboxylic salt is derived from: (a) at least one hydrocarbyl-substituted carboxylic acid or anhydride, or at least one derivative formed by reacting the at least one hydrocarbyl-substituted carboxylic acid or anhydride with a reactant; and (b) at least one amine, alkaline earth metal, or alkali or alkaline earth metal compound. The reactant may be: (1) an ammonia, (2) an alcohol, (3) a primary amine; (4) a secondary amine; (5) a hydroxylamine; or (6) any combination of two or more of any of (1)-(5). (See Forsberg at col. 2, lines 23 – 53). The alcohols used to make the derivative include alkylene glycols and polyoxyalkylene alcohols. (See Forsberg at col. 8, lines 48-51).

Forsberg further discloses aqueous compositions characterized by an aqueous phase with the carboxylic salts dispersed or dissolved in the aqueous phase. The aqueous compositions encompass both concentrates and water-based functional fluids. The concentrates and water-based functional fluids can include other conventional additives including surfactants, thickeners, oil-soluble and water-insoluble functional additives

(such as anti-wear agents, extreme pressure agents, dispersants, etc)., and supplemental additives such as corrosion-inhibitors, shear stabilizing agents, etc. Thickeners include poly-n-vinyl pyrrolidones, homo- and copolymers as well as water-soluble salts of styrene, maleic anhydride, and isobutylene maleic anhydride copolymers. (See Forsberg at col. 27, lines 6-9). Oil-soluble and water-insoluble functional additive include certain solid lubricants such as graphite, molybdenum disulfide, and polytetrafluoroethylene and related solid polymers. (See Forsberg at col. 31, lines 25-27).

Yamamoto discloses a solid lubricant including an adduct of isocyanuric acid or cyanuric acid (“(iso)cyanuric acid”) and melamine (“melamine/(iso)cyanuric acid adduct”). The melamine/(iso)cyanuric acid adduct may be incorporated in a conventional lube oil or grease, or an aqueous solution. (See Yamamoto at col. 1, line 59 – col. 2, line 10). The melamine/(iso)cyanuric acid adduct may be added, or dispersed, to a small amount of water or a mixture of water and a water-soluble organic solvent. The water-soluble organic solvent may be ethyl alcohol, ethylene glycol, propylene glycol, diethylene glycol, isopropyl alcohol, glycerin, polyethylene glycol, and a copolymer of ethylene oxide and propylene oxide. (See Yamamoto at col. 4, lines 7-16 and col. 6, lines 21-30).

Applicants respectfully submit that Forsberg and Yamamoto, whether considered individually or in combination, fail to disclose, teach, or suggest, all of the elements of the present claims. For example, the combination of Forsberg and Yamamoto fails to disclose, teach, or suggest, at least, “*10 to 40% by mass of a solid lubricating agent,*” “*2*

to 20% by mass of an attaching agent having both lubricating and dispersing properties,” and *“2 to 20% by mass of an agent having both wetting characteristics and moisture evaporation-accelerating actions,”* as recited in independent claim 1.

As a threshold matter, while the Office Action alleged that Forsberg discloses *“a inorganic solid lubricating agent,”* and *“an attaching agent having both lubricating and dispersing properties,”* as recited in independent claim 1, and that the combination of Forsberg and Yamamoto disclose *“an agent having both wetting characteristics and moisture evaporation-accelerating actions; and water,”* as recited in independent claim 1, the Office Action correctly concluded that neither Forsberg, nor Yamamoto, discloses the claimed ranges of *“10 to 40% by mass of,”* *“2 to 20% by mass of,”* and *“2 to 20% by mass of,”* respectively. (See Office Action at pages 4-5). Thus, the Applicants and the Examiner are in agreement that neither Forsberg, nor Yamamoto, disclose the claimed ranges of the inorganic solid lubricating agent, the attaching agent, and the agent having both wetting characteristics and moisture evaporation-accelerating actions.

However, while the Office Action correctly concluded that neither Forsberg, nor Yamamoto, discloses the claimed ranges of independent claim 1, the Office Action further alleged that said claimed ranges are obvious in light of the cited references of Forsberg and Yamamoto. Applicants respectfully submit that this position is erroneous for at least the following reasons.

With respect to *“2 to 20% by mass of an attaching agent having both lubricating and dispersing properties,”* as recited in independent claim 1, the Office Action alleged

that Forsberg discloses isobutylene maleic anhydride copolymer (which the Office Action alleged is the attaching agent having both lubricating and dispersing properties) in the amount of 0.1 to about 10% by weight, and thus Forsberg discloses the amount of the attaching agent within/overlapping the claimed ranges. The Office Action further alleged that in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a prima facie case of obviousness exists. (See Office Action at pages 4-5).

Furthermore, with respect to “*10 to 40% by mass of an inorganic solid lubricating agent,*” and “*2 to 20% by mass of an agent having both wetting characteristics and moisture evaporation-accelerating actions; and water,*” the Office Action alleged that the claimed ranges are concentrations of a result-effective variable, because the changing of the concentration affects the type of product obtained, and thus, are obvious because the “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” (See Office Action at pages 4-5).

Applicants respectfully traverse these allegations of obviousness. As stated in the Manual of Patent Examining Procedure, “differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical.” (MPEP 2144.05 Obviousness of Ranges – II. Optimization of Ranges). Applicants respectfully submit that the Office Action’s allegations of obviousness ignore direct evidence in the specification that the claimed ranges are critical. Specifically, the specification states that:

Accordingly, it is essential to the aqueous lubricant for plastic working according to the present invention that it comprises 10 to 40% by mass of a solid lubricating agent as the component (a); 2 to 20% by mass of an attaching agent having both lubricating and dispersing properties as the component (b); 2 to 20% by mass of an agent having both wetting characteristics and moisture evaporation-accelerating actions as the component (c); and water, in order to satisfy the following requirements, simultaneously: (1) dispersion stability of a solid lubricating agent in water, (2) uniform adhesion, (3) quick-drying property, (4) adhesion strength of coating to a material to be processed and (5) high lubricating property. (See Specification at page 10, line 20 – page 11, line 5, emphasis added).

Thus, the specification makes clear that the claimed ranges of the independent claims are essential in order to simultaneously provide: (1) dispersion stability of a solid lubricating agent in water; (2) uniform adhesion; (3) a quick-drying property; (4) an adhesion strength of coating to a material to be processed; and (5) a high lubricating property.

Furthermore, under U.S. patent law, a particular parameter must first be recognized as a result-effective variable (i.e. a variable which achieves a recognized result), before the determination of the optimum or workable ranges of the variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (C.C.P.A. 1977), emphasis added. Applicants respectfully submit that the Office Action has failed to provide objective evidence to support its allegation that “*an agent having both wetting characteristics and moisture evaporation accelerating actions,*” as recited in independent claim 1 is a result-effective variable. Specifically, there is no discussion in either Forsberg or Yamamoto that the alkylene glycol is a variable which achieves a recognized result. Thus, Applicants respectfully challenge the Office Action’s allegation

that the claimed range of “*an inorganic solid lubricating agent,*” and the “*an agent having both wetting characteristics and moisture evaporation accelerating actions*” is ordinarily within the skill of the art

Therefore, for at least the reasons discussed above, the combination of Forsberg and Yamamoto fails to disclose, teach, or suggest, all of the elements of independent claim 1.

Furthermore, Applicants respectfully submit that the Office Action has failed to establish a prima facie case that claim 1 would have been obvious to one of ordinary skill in the art, in light of the cited references of Forsberg and Yamamoto, because, for at least the reasons discussed below, one of ordinary skill in the art would not be motivated to combine the cited references of Forsberg and Yamamoto.

As reiterated by the Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007), the framework for the objective analysis for determining obviousness under 35 U.S.C. § 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries are: (a) determining the scope and content of the prior art; (b) ascertaining the differences between the claimed invention and the prior art; and (c) resolving the level of ordinary skill in the pertinent art. (See *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966); see also MPEP § 2141).

The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. § 103 should be made explicit. The court stated that “rejections on obviousness cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (See *KSR*, 550 U.S. at 398, 82 USPQ2d at 1396; see also MPEP § 2141).

Applicants respectfully submit that Yamamoto discusses an organic lubricant consisting of an melamine/(iso)cyanuric acid adduct in order to exclude an inorganic lubricant, such as MoS₂ or carbon. (See Yamamoto at col. 1, lines 38-51 and col. 8, lines 7-12). As one of ordinary skill in the art would readily understand, alkylene glycols act on an organic lubricant as a medium which only disperses the organic lubricant along with water. In contrast, Forsberg discusses that aqueous compositions may include MoS₂ or carbon. (See Forsberg at col. 31, lines 25-27). Furthermore, embodiments of the present invention, may also include MoS₂ or carbon. Thus, one of ordinary skill in the art, would not be motivated to combine Yamamoto, in which MoS₂ or carbon is excluded and an organic lubricant is used, with Forsberg, in which an inorganic lubricant is used, as Yamamoto teaches away from using an inorganic lubricant.

Accordingly, Applicants respectfully submit that the Office Action has failed to establish a prima facie case that claim 1 would be obvious to one of ordinary skill in the art, in light of Yamamoto and Forsberg.

For the reasons stated above, Applicants respectfully request that this rejection be withdrawn.

Claims 2-5 depend upon independent claim 1. Thus, Applicants respectfully submit that claims 2-5 should be allowed for at least their dependence upon independent claim 1, and for the specific elements recited therein.

Office Action Summary

Applicants respectfully request the Examiner to approve the drawings submitted in the present application, since no box on item 10 of the Office Action Summary was checked. Also, Applicants respectfully point out that the status of the currently pending Office Action (i.e. item 1 of the Office Action Summary) is not described.

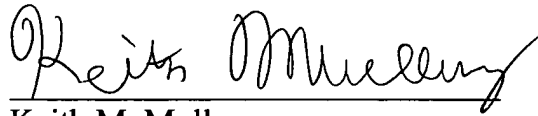
Conclusion

For at least the reasons discussed above, Applicants respectfully submit that the cited prior art references fail to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-6 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



Keith M. Mullervy
Registration No. 62,382

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Vienna, Virginia 22182-6212
Telephone: 703-720-7800
Fax: 703-720-7802

KMM:sew

Enclosures: Information Disclosure Statement
Check No. 20582 (\$180.00)